

CLAIMS

What is claimed is:

1. (Currently amended) A treadmill comprising:
a frame;
a power supply;
a motor coupled to the power supply, the motor including
a shaft and a stator fixedly coupled to the frame,
at least one bearing coupled to the shaft, and
a rotor coupled to the at least one bearing, the rotor including a portion
that surrounds at least a portion of the stator; ~~and~~
a conveyer coupled to the frame ~~and to the rotor, the conveyer being driven at a~~
~~rotational speed that is different than a rotational speed of the rotor; and~~
a power-transmission assembly coupling the rotor and the conveyer.
2. (Original) A treadmill as set forth in claim 1 wherein the shaft and stator are a
unitary element.
3. (Original) A treadmill as set forth in claim 1 wherein the stator includes one or
more wires that create a plurality of magnetic poles when the motor receives an electrical
power, and
wherein the rotor includes a plurality of magnets operable to magnetically interact
with the plurality of magnetic poles, thereby causing rotation of the rotor.

4. (Currently amended) A treadmill ~~as set forth in claim 3~~ comprising:
a frame;
a power supply;
a motor coupled to the power supply, the motor including
a shaft and a stator fixedly coupled to the frame, the stator including one
or more wires that create a plurality of magnetic poles when the motor receives an
electrical power,
at least one bearing coupled to the shaft, and
a rotor coupled to the at least one bearing, the rotor including a portion
that surrounds at least a portion of the stator, a plurality of magnets operable to
magnetically interact with the plurality of magnetic poles thereby causing rotation of the
rotor, and ~~wherein the rotor further includes~~ a back iron, wherein the magnets are coupled
to the back iron, and wherein the back iron includes a superfluous mass such that, when
the rotor rotates, the superfluous mass produces kinetic energy for smoothing a shock
load applied to the motor; and
a conveyer coupled to the frame and to the rotor.
5. (Original) A treadmill as set forth in claim 4 wherein the back iron is a
permeable-magnetic metal back iron.
6. (Original) A treadmill as set forth in claim 5 wherein the rotor further includes at
least one endplate, wherein the at least one endplate includes a second superfluous mass
such that, when the rotor rotates, the second superfluous mass produces additional kinetic
energy for smoothing the shockload.

7. (Currently amended) A treadmill as set forth in claim 1 ~~and further comprising~~ wherein the power-transmission assembly comprises a pulley-and-belt assembly having at least one pulley and at least one belt, the pulley-and-belt assembly coupling the rotor to the conveyer.

8. (Original) A treadmill as set forth in claim 7 wherein the pulley-and-belt assembly includes a first pulley coupled to the rotor, a second pulley coupled to the conveyer, and a belt coupled to the first and second pulleys.

9. (Currently amended) A treadmill as set forth in claim 1 ~~and further comprising~~ wherein the power-transmission assembly comprises a gear assembly having two or more gears, the gear assembly coupling the rotor to the conveyer.

10. (Original) A treadmill as set forth in claim 9 wherein the gear assembly includes a first gear coupled to the rotor and a second gear coupled to the conveyer, wherein the second gear is driven by the first gear.

11. (Currently amended) A treadmill as set forth in claim 1 ~~and further comprising~~ wherein the power-transmission assembly comprises a sprocket-and-chain assembly having at least one sprocket and at least one chain, the sprocket-and-chain assembly coupling the rotor to the conveyer.

12. (Original) A treadmill as set forth in claim 11 wherein the sprocket-and-chain assembly includes a first sprocket coupled to the rotor, a second sprocket coupled to the conveyer, and a chain coupling the first and second sprockets.

13. (Currently amended) A treadmill as set forth in claim 1 ~~and further comprising~~ wherein the power-transmission assembly comprises a multiple-speed-transmission assembly coupling the rotor to the conveyer.

14. (Original) A treadmill comprising:
 - a frame;
 - control circuitry including a power source;
 - a motor coupled to the control circuitry, the motor including
 - a shaft and a stator fixedly coupled to the frame,
 - a rotor having at least a portion that surrounds at least a portion of the stator; and
 - a first pulley coupled to the rotor;
 - a first belt coupled to the first pulley; and
 - a conveyer having a second pulley coupled to the first belt.
15. (Original) A treadmill as set forth in claim 14 wherein the control circuitry includes a controller.
16. (Original) A treadmill as set forth in claim 14 wherein the shaft and the stator form a unitary element.
17. (Original) A treadmill as set forth in claim 14 wherein the rotor includes the first pulley.
18. (Original) A treadmill as set forth in claim 14 wherein the conveyer is driven at a rotational speed that is different than a rotational speed of the rotor.
19. (Original) A treadmill as set forth in claim 14 wherein the motor further includes first and second bearings coupled to the shaft, and
 - wherein the rotor is coupled to the bearings, thereby allowing the rotor to rotate.

20. (Original) A treadmill as set forth in claim 19 wherein the stator includes one or more wires that create a plurality of magnetic poles when the motor receives an electrical power,

wherein the rotor includes a plurality of magnets operable to magnetically interact with the plurality of poles, thereby causing the rotation of the rotor.

21. (Original) A treadmill as set forth in claim 20, wherein the rotor further includes a back iron,

wherein the magnets are coupled to the back iron, and

wherein the back iron includes a superfluous mass such that, when the rotor rotates, the superfluous mass produces kinetic energy for smoothing a shock load applied to the motor.

22. (Original) A treadmill as set forth in claim 21 wherein the back iron is a permeable magnetic metal back iron.

23. (Original) A treadmill as set forth in claim 21 wherein the rotor further includes at least one endplate,

wherein the at least one endplate includes a second superfluous mass such that, when the rotor rotates, the second superfluous mass produces additional kinetic energy for smoothing the shock load.

24. (Original) A treadmill comprising:

a frame;

a power supply;

a controller coupled to the frame and the power supply;

a motor coupled to the power supply, the motor including

a shaft and a stator fixedly coupled to the frame by at least one fastener, the stator including one or more wires that create a plurality of magnetic poles when the motor receives an electrical power from the power supply,

first and second bearings coupled to the shaft,

a rotor including a permeable magnetic back iron, a plurality of magnets coupled to the back iron, a first endplate coupled to the back iron and the first bearing, and a second endplate coupled to the back iron and the second bearing, wherein at least a portion of the back iron encircles at least a portion of the stator, and the back iron, first endplate and second endplate include a superfluous mass such that, when the rotor rotates, the superfluous mass produces additional kinetic energy for smoothing a shock load applied to the rotor, and

a first pulley coupled to the rotor;

a first belt coupled to the first pulley;

a roller having a second pulley coupled to the first belt and being driven at a rotational speed that is different than a rotational speed of the rotor; and

a second-belt coupled to the roller.

25. (Original) A treadmill as set forth in claim 24 wherein the rotor includes the first pulley.

26. (Original) A treadmill as set forth in claim 25 wherein the shaft and the stator form a unitary element.